DOCUMENT RESUME

ED 075 601 VT 019 824

TITLE	An Evaluation of a Staff- and Community-Implemented Model Integrating Career Development Concepts in a Total Educational Program, K-12. Final Report.
INSTITUTION	Alameda County School Dept., Hayward, Calif.
SPONS AGENCY	Bureau of Adult, Vocational, and Technical Education (DHEW/OE), Washington, D.C.; California State Dept. of Education, Sacramento. Research Coordinating Unit.
REPORT NO	RCU-01-10017-C099-72
PUB DATE	72
NOTE	37p.
EDRS PRICE	MF-$0.65 HC-$3.29
DESCRIPTORS	Attitude Tests; *Career Education; *Community Involvement; Comparative Analysis; Control Groups; Elementary Grades; *Experimental Programs; Maturity Tests; Occupational Information; *Parent Participation; Post Testing; Pretesting; *Program Evaluation; Research Projects; Secondary Grades; Vocational Development
IDENTIFIERS	*California

ABSTRACT

The purpose of this project was to evaluate the effects of a comprehensive career development program operating during the 1971-72 school year on selected behaviors of students, parents, school staffs, and community participants. Through career development experiences within the normal curriculum in certain experimental schools the project had as its objectives: (1) to demonstrate a change in student attitudes toward careers and vocations as measured by a test of vocational maturity, (2) to produce a significant increase in vocational information by experimental students as compared to a control population, (3) to change staff, parental, and community attitudes toward vocational education and career education, (4) to increase parent and community participation in curriculum planning and implementation in the experimental schools, (5) to have experimental students demonstrate one or more exploratory behaviors during the school year, and (6) to have teachers in the experimental schools implement three or more career development experiences during the school year. While the last three objectives were met or exceeded, no attitude changes were evidenced, although there was some increase in interest and information. Detailed test and evaluation results are tabulated and discussed. Project-designed inventories and factor analyses are appended. (MF)

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Vocational Education
Research Coordinating Unit
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ED 075601

AN EVALUATION OF A STAFF- AND COMMUNITY-IMPLEMENTED MODEL INTEGRATING CAREER DEVELOPMENT CONCEPTS IN A TOTAL EDUCATIONAL PROGRAM, K-12

RCU 01-10017-C099-72

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Final Report

The following report is being submitted in accordance with the original proposal plans. All materials referred to in the report are on file in the office of the Coordinator of Vocational Education for the Alameda County School Department.

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INTRODUCTION

The following is a report of the findings of California State Department of Education, Vocational Education Section Project No. 01-10017-C099-72, "An Evaluation of a Staff- and Community-Implemented Model Integrating Career Development Concepts in a Total Educational Program, K-12." The purpose of this project was to evaluate the effects of a comprehensive career development program on selected behaviors of students, parents, school staffs, and community participants.

The project was funded under the Guidance and Counseling section of Public Law 90-576 and California Research Coordinating Unit Small Grant Projects. The career education project, herein evaluated, operated during the 1971-72 school year.

Districts in Alameda and Sonoma Counties were chosen for this study because of their different population characteristics. The New Haven Unified School District in Alameda County has a large minority population (primarily Spanish speaking) and considerable economic depression while the Santa Rosa City Schools in Sonoma County are predominantly white and middle class.

OBJECTIVES

During the first quarter of the project's operation, the original objectives were slightly modified by mutual agreement of local school district, county, and state department personnel. The late timing for completing funding arrangements necessitated most of the changes. Schools and programs to be evaluated had begun operation in September and the evaluation component did not get underway until November.

The evaluation project is, by nature, integrally related to the implementation project. The objectives of any evaluation component can only reflect the measurable elements of the project it purports to evaluate.

A statement of each objective as originally written, its restatement and the rationale for this restatement, follows. It was the considered opinion of the entire project staff that the restatement resulted in a sharpening of objectives in keeping with the aims and timing of project activities.

OBJECTIVE 1

ALL STUDENTS AND STAFF MEMBERS AND ALL PARENTS AND COMMUNITY MEMBERS WHO PARTICIPATE WILL HAVE A CHANGED ATTITUDE TOWARD VOCATIONAL EDUCATION AND CAREER DEVELOPMENT AS A RESULT OF THE CAREER DEVELOPMENT PROGRAM AS MEASURED BY A PRE/POST ATTITUDINAL SURVEY.

Revised Objective 1

All staff members and all parents and community members who participate will have a changed attitude toward vocational education and career development as a result of the career development program as measured by a pre/post attitudinal survey.

Rationale for Revision of Objective 1

The word "student" was eliminated since student attitudes are being assessed under Objectives 2 and 4.

OBJECTIVE 2

EIGHTY PERCENT OF THE STUDENTS IN THE EXPERIMENTAL SCHOOLS WILL HAVE AN INCREASED SCORE ON A PRE/POST TEST OF VOCATIONAL MATURITY.

Revised Objective 2

Eighty percent of the students in the experimental schools (compared to students in the control schools) will have a higher score on a post-test of vocational maturity.

Rationale for Revision of Objective 2

The added dimension in this objective of control school testing (using a post-test format) should provide a more valid assessment base. Late funding approval resulted in postponed pretesting, making an experimental vs. control post-test format more feasible.

OBJECTIVE 3

THERE WILL BE A ONE HUNDRED PERCENT INCREASE IN PARENT AND COMMUNITY PARTICIPATION IN CURRICULUM PLANNING AND IMPLEMENTATION IN THE EXPERIMENTAL SCHOOLS AS A RESULT OF THE CAREER DEVELOPMENT PROGRAM (MEASURED IN COMPARISON WITH THE PREVIOUS YEAR'S PARTICIPATION).

(No change was made in the statement of this objective.)

OBJECTIVE 4

EIGHTY PERCENT OF ALL STUDENTS, PARENTS (WHO PARTICIPATE), STAFF MEMBERS AND COMMUNITY MEMBERS (WHO PARTICIPATE) WILL HAVE AN INCREASED SCORE ON A PRE/POST VOCATIONAL INFORMATION TEST.

Revised Objective 4

Eighty percent of all students will have an increased score on a pre/post vocational information test.

Rationale for Revision of Objective 4

The nature of parent and community participation in the project makes vocational information testing illogical.

OBJECTIVE 5

FIFTY PERCENT OF ALL STUDENTS SIXTH GRADE AND ABOVE IN THE EXPERIMENTAL SCHOOLS WILL DEMONSTRATE ONE OR MORE EXPLORATORY (INFORMATION-SEEKING) BEHAVIORS DURING THE SCHOOL YEAR 1971-72 AS COMPARED TO TWENTY PERCENT OR LESS IN THE CONTROL SCHOOLS.

(No change was made in the statement of this objective.)

OBJECTIVE 6

ALL TEACHERS IN THE EXPERIMENTAL SCHOOLS WILL IMPLEMENT THREE OR MORE CAREER DEVELOPMENT EXPERIENCES DURING THE SCHOOL YEAR 1971-72 AS COMPARED TO TWO OR LESS IN THE CONTROL SCHOOLS DURING THE SAME TIME PERIOD.

(No change was made in the statement of this objective.)

PROJECT OPERATION

Reference has been made previously in this report to problems generated by the timing of funding and the commencement of operation of evaluation activities. A further explanation of these factors is deemed essential to understanding project outcomes.

One of the problems had to do with the separation of the evaluation component as an independent project. This project design was considered beneficial because it allowed for a much more extensive evaluative study than would have otherwise been permitted. It helped reduce the negative, restricting influences that sometimes develop when a director is attempting to weld a team together and at the same time be continuously viewed as its evaluator. Such separation, however, generated communication problems and led to a time delay which required format changes. Experimental subjects could not be considered uncontaminated since they had experienced at least two months of project treatment by the time the evaluation project started. Standard pre/post assessment procedures necessarily had to be altered.

A second problem was caused by the necessity for changing participating districts. Originally Emery Unified and Santa Rosa City Schools were to be the participating districts. Internal district problems in Emery necessitated a late change in plans for participation, and as a consequence, the New Haven Unified School District was selected as a substitute. This meant that the Sonoma County implementation project was able to start in September, 1971 while the New Haven implementation project did not begin until November, 1971.

While these two problems were not the direct concern of the evaluation project, the impact upon results was an unavoidable consideration.

Experimental Schools in the Project

New Haven School District

Hillview Crest Elementary - 76 subjects, 3 teachers
Two classes grade one, one class grade three.

Barnard Elementary - 35 subjects, 1 teacher
One class grade six.

Manuel White Elementary - 55 subjects, 2 teachers
One class grade four, one class grade five.

Alvarado Junior High - 87 subjects, 4 teachers
Two classes grade seven, two classes grade eight.

James Logan High School - 68 subjects, 4 teachers
Classes in economics, advanced math, business, and film study.

Santa Rosa City Schools

Helen Lehman Elementary - 109 subjects, 5 teachers
One class grade two, one grade three and four, two grades five and six, and one grade six

Lawrence Cook Junior High - 160 subjects, 4 teachers
Two classes grade seven, one grade eight, and one grade nine.

Santa Rosa High School - 119 subjects, 5 teachers
All classes in grades 10 to 12.

Control Groups

In accordance with the advice and cooperation of Sonoma County personnel, the following schools were selected to provide control subjects:

Mark West Elementary School (Santa Rosa)
One entire class group at each grade level, K through 6 - approximately 200 subjects

Petaluma Junior and Senior High Schools
Approximately 300 subjects. At the junior and senior high levels, classes were selected to match the subject areas and grade levels of the experimental groups.

There was an effort made to select classes of average academic ability students at all levels. The schools selected were predominantly populated by white, middle-class students.

Instruments Used in Data Collection

The instruments available for measuring vocational maturity and interest were found to be almost exclusively directed to the senior high or adult age individual. Therefore, it was necessary to develop new assessment techniques for the project to deal with students on the elementary level.

The Crites VDI (Vocational Development Inventory) was selected as the standardized tool for measuring the development of vocational maturity with the secondary level project participants. This inventory was designed for use only with junior and senior high students and was inappropriate for lower elementary school use because of vocabulary content.

For the purpose of assessing specific project treatment effects no instruments existed, and therefore, these had to be constructed. Two inventories were thus designed, one for the elementary level K-6, a second for the junior-senior high level 7-12. (Appendix A)

Computer center facilities at the University of California, Berkeley, were used for the analyses.

Development of Data Collection Devices

The construction of the self-designed project instruments for data collection on attitudinal changes proceeded along the following lines:

An item pool was drawn up with suggestions for item pool entries based upon:

a. a review of the literature as it relates to vocational maturity, career interest development, development of the career decision-making process, and attitudes toward the world of work and the work ethic upon which our society is premised,

b. a survey of existing related inventories,

c. the California State Department Task Force Guidelines for Career Education,

d. the specific goals and planned treatments of the career education project staffs in the two districts.

Items were then screened to eliminate obvious duplications, obscure and ambiguous wording, and those considered less relevant to specific project aims. Opinions at this stage were solicited from leading test construction experts and career guidance specialists.

The inventories as compiled were trial tested with non-project students to test ease of administration and were discussed with these students to eliminate or minimize vocabulary problems. (Average ability classes were used for this purpose and the seventh grade level was selected for standardizing vocabulary of the secondary level instrument.) The language problem was considered to be less acute with the elementary group since the inventory to be used at this level was not designed to be completely self-administering. (Copies of both of these program-designed inventories can be found in Appendix A.)

An 11-item, elementary-level inventory and a 46-item, secondary-level inventory were drawn up and pilot tested. Subsequently, because of ambiguity, two additional items were eliminated from the secondary instrument leaving 44 items to be used in scoring.

Fourteen nationwide experts in the fields of vocational education, career guidance and test construction were polled for correct response direction and scoring keys were developed from their responses. (Appendix B) Only items which permitted unanimous or no more than one discrepant response set were retained.

A split-half correlation study of the secondary inventory was performed to test inventory reliability. This yielded a split-half R=0.7125.

Factor analyses were performed for both the elementary and secondary level inventories.

For the elementary analysis the responses of 191 control group subjects were used. This study yielded four factors from the 11-item inventory.

The factor study for the secondary form utilized the responses of 290 control group subjects. This analysis yielded 18 factors. The number of factors seems high. This was considered to be primarily a result of the fact that in construction, items included in the inventory were carefully selected to sample the entire range of concepts with which the project would deal. Therefore, a greater number of separate and discrete elements might be produced by factor analysis.

The factor components were carefully reviewed for identification by the statistical and psychological staff at the University of California, Berkeley. As a result of this review it was decided that for the purposes at hand, total inventory scores rather than factor scores would provide a more appropriate analysis base. (Results of the factor analyses can be found in Appendix C.)

Application of Inventories

All individuals administering tests were oriented by the same individual. Language used in administration was standardized as much as possible. Reading of test items to groups at lower grade levels helped control speed of response and attention span.

Post-testing was preceded by additional tester orientation for the purpose of accommodating or anticipating any administration problems detected in the pretesting sessions.

Testing procedures were standardized as follows in order to further assure comparability of findings:

	Elementary Inventory
Kindergarten Grade 1 Grade 2	All tests individually administered with the tester reading each item and recording all responses.
Grade 3 Grade 4 Grade 5 Grade 6	Tests group-administered with tester reading each item and with testee recording his own responses.

Secondary Inventory

Junior High

Grade 7 Grade 8 Grade 9	Tests group-administered with tester reading each item and testees marking their own responses.

Senior High

Grade 10 Grade 11 Grade 12	Tests group-administered with testees reading and marking their own responses.

RESULTS

OBJECTIVE 1

ALL STAFF MEMBERS AND ALL PARENTS AND COMMUNITY MEMBERS WHO PARTICIPATE WILL HAVE A CHANGED ATTITUDE TOWARD VOCATIONAL EDUCATION AND CAREER DEVELOPMENT AS A RESULT OF THE CAREER DEVELOPMENT PROGRAM AS MEASURED BY A PRE/POST ATTITUDINAL SURVEY.

The evaluation of this objective was not fully realized for the following reasons:

Before the evaluation project was begun, an attempt was made at assessing teacher attitudes toward career education. An inventory was

drawn up for this purpose and project teachers were asked to respond. The scale for answering was improperly drawn. A Likert-type scale was intended which should have included balanced response categories ranging through strongly agree, agree, uncertain, disagree, strongly disagree. As constructed, however, the categories in order of use were strongly agree, agree, disagree, uncertain. Proper statistical processing of results was not possible. Additionally, site directors were unwilling to require that staff members redo such inventories after proper construction. By the time such discrepancy was noted, at least three months of project time had elapsed and valid pretesting was obviated.

The New Haven Unified School District was experiencing many (not directly project-related) community relation problems such as conflict over building plans and alienation of Spanish-speaking parents which made the staff sensitive to placing such a formal testing request on parents. By the time post-testing was appropriate, some of these problems had intensified. Efforts were made to win favor for writing a Spanish language form of the inventory, but such a procedure was not deemed practical or appropriate by district personnel at the time.

It was further concluded by project personnel that, since parent participation was often of a one-time nature, pre/post assessment was meaningless and that the objective could be evaluated more effectively by observation. The site directors, teachers, and administrators all agreed that parent feedback regarding the project was of a most positive nature. Virtually no "waste-of-time" comments were evidenced. Much more typical is the reported comment, "I wish I had had more opportunity or challenge to think about how I might use my education before I finished school."

OBJECTIVE 2

EIGHTY PERCENT OF THE STUDENTS IN THE EXPERIMENTAL SCHOOLS (COMPARED TO STUDENTS IN THE CONTROL SCHOOLS) WILL HAVE A HIGHER SCORE ON A POST-TEST OF VOCATIONAL MATURITY.

Crites Vocational Maturity Inventory was the tool for measuring this objective. The Crites VDI scores were analyzed according to group means, sex, and grade level differentials. Crites own research indicates that the relationship of items to grade level is strongest. Reference is made to the following Crites publications which contain detailed findings and developmental information on the VDI.

Crites, John O., The Maturity of Vocational Attitudes in Adolescence, American Personnel & Guidance Association, 1607 New Hampshire Ave., N.W. Washington, D.C. 20009

....., Vocational Psychology, McGraw-Hill Book Co., New York, N.Y. 10036

Most of the Crites research to this point has been cross-sectional. Large numbers of students nationwide have been tested in an attempt to derive standardized scoring norms. (The table which immediately follows this discussion gives means, standard deviations, and range results from those studies for students nationwide.) There was no discussion of the specific kinds of experiences in vocational development programs which these students had been exposed to. However, the Crites literature does discuss elements of some 50 other studies which have been made or are in progress and which give indication that vocational maturity scores can in fact be measured and that the VDI is sensitive enough to assess this dimension and measure change.

Project students were not tested in a pre/post format but on a post-test only. This type of study was necessitated by the fact that the evaluation component did not get started until November, and by the time permission and materials for testing were secured, school vacations were at hand. This meant that testing would have to be conducted in January - too late to assess the full impact of a project when essentially half of it had been completed. Therefore, only post-test scores are available. These are presented for comparison with scores from students in other states as well as with other non-project California students.

The following tables present the findings from the Crites VDI testing program:

Table 1

Crites VDI Findings

Project Schools Compared to National Samplings by Grade Level According to Means

Seventh Grade

	Iowa	Texas	Tennessee	Ohio	Experimental Schools Santa Rosa	New Haven
N	657	575	568	277	95	13
Mean	33.25	29.28	30.13	24.70	32.24	27.08
SD	5.65	5.53	5.08	6.22	5.12	3.22
Range	19-43	15-40	15-40	2-36		

Eighth Grade

	Iowa	Texas	Pennsylvania	Tennessee	California	Ohio	Experimental Schools Santa Rosa	New Haven
N	601	575	1,267	500	579	225		60
Mean	35.07	30.40	33.37	33.20	33.43	27.84		29.75
SD	5.44	6.08	5.26	5.60	5.01	6.10		6.53
Range	20-44	10-43	18-44	16-45	20-43	10-40		

Ninth Grade

	Iowa	Texas	Pennsylvania	Tennessee	California	Ohio	Experimental Schools Santa Rosa	New Haven
N	703	582	1,273	484	526	202	46	14
Mean	36.50	32.59	34.69	32.97	34.86	30.71	34.48	32.29
SD	4.82	5.69	4.93	5.13	4.87	5.54	5.39	4.23
Range	23-45	14-43	19-47	18-42	20-45	16-42		

Table 1 (continued)

Crites VDI Findings

Project Schools Compared to National Samplings by Grade Level According to Means

Tenth Grade

	Iowa	Texas	Tennessee	California	Experimental Schools Santa Rosa	New Haven
N	213	139	390	948	40	26
Mean	37.81	34.10	34.63	35.21	34.43	31.31
SD	4.58	5.27	5.23	5.44	5.07	6.77
Range	26-47	14-43	20-45	17-46		

Eleventh Grade

	Iowa	Texas	Pennsylvania	Oregon	Tennessee	California	Experimental Schools Santa Rosa	New Haven
N	131	93	149	514	393	923	19	39
Mean	38.16	36.75	36.75	36.29	35.54	35.58	32.79	32.85
SD	4.72	4.95	4.81	5.03	5.33	5.45	5.78	5.67
Range	26-47	21-45	20-44	22-47	19-44	15-47		

Twelfth Grade

	Iowa	Pennsylvania	Ohio	Oregon	Tennessee	California	Experimental Schools Santa Rosa	New Haven
N	143	118	119	753	291	834	7	33
Mean	39.00	38.90	37.59	37.54	37.04	36.43	37.00	35.00
SD	4.00	4.54	4.84	4.97	5.47	5.57	4.66	5.09
Range	31-47	25-48	23-45	21-47	23-46	16-48		

Table 2

Crites VDI Findings

Sex Differences

A study of differences on the Crites Inventory according to sex using t-test analysis yielded differences significant at the .01 level with girls scoring higher as follows:

	Boys	Girls
N	207	189
Mean	31.3720	33.7143
SD	5.7818	5.7781

Table 3

Crites VDI Findings

Experimental School Differences

A further review of the data according to district result in t-test findings indicating that Santa Rosa secondary students scored higher than New Haven students as follows:

	Santa Rosa	New Haven
N	209	187
Mean	33.3349	31.5455
SD	5.4652	6.2115

The higher scores obtained by Santa Rosa students were found to be significant at the .01 level.

From the analysis of Table 1, no significant difference could be shown between the mean scores of the experimental schools in Santa Rosa as compared to the mean scores of states used in the national sampling on the Crites Vocational Development Inventory. The Santa Rosa schools showed higher mean scores at the seventh grade than mean scores in three out of four states reported; in grade nine, higher in three out of five; in grade ten, one out of three; in grades eleven and twelve, none out of five.

In the New Haven schools, the results showed higher mean scores at seventh grade in one out of four states reported; grade eight and nine, one out of five; grade ten, none out of three; grade eleven and twelve, none out of five.

In the comparison of the mean scores of Santa Rosa experimental classes with mean scores for California, the Santa Rosa scores were comparable. However, New Haven scored lower at all grade levels. Such findings relate to expected differentials. It should be noted that the two districts selected for study were selected because of population differences along socio-economic lines and other studies seem to indicate a relationship between the maturation of vocational and career orientations to parental occupation levels.

OBJECTIVE 3

THERE WILL BE A ONE HUNDRED PERCENT INCREASE IN PARENT AND COMMUNITY PARTICIPATION IN CURRICULUM PLANNING AND IMPLEMENTATION IN THE EXPERIMENTAL SCHOOLS AS A RESULT OF THE CAREER DEVELOPMENT PROGRAM. (MEASURED IN COMPARISON WITH THE PREVIOUS YEAR'S PARTICIPATION.)

This objective was greatly exceeded. Both districts did, in fact, experience greatly increased parent participation in school activities which could be directly related to the project. Extensive human resource lists of volunteers now exist in each of the participating districts as testimony of the approval and interest that parents have accorded to the emphasis of career orientation concepts in the curriculum.

Parents were included as participants in the team-planning sessions. They were also used as presenters on careers in the classroom and on their jobs. They arranged for student visitations at their places of employment, helped prepare tapes and slide/tape presentations detailing the nature of their jobs, accompanied groups on field trips, and role-played with students in interviewing and job-seeking techniques. The expression of satisfaction of project teachers regarding the attitudes and level of parent participation is one of the most positive project results.

In each district, as might be expected, parent participation in school was greatest at the elementary level and diminished somewhat at the upper levels. However, a great increase over past years of participation in out-of-school events at the upper levels was noted by the teachers.

A summary of participation by categories follows:

Santa Rosa City Schools

	Speakers	Transporters	Other Involvement (Arranging Visits to Job Interviews, etc.)
Elementary	75	25	10
Junior High	35	8	35
Senior High	6	–	50

New Haven Unified School District

	Speakers	Transporters	Other Involvement (Arranging Visits to Job Interviews, etc.)
Elementary	50	16	20
Junior High	30	10	27
Senior High	20	–	40

Approximately 200 New Haven Unified School District elementary school parents participated in organizing and attending a potluck dinner for project student parents.

OBJECTIVE 4

EIGHTY PERCENT OF ALL STUDENTS WILL HAVE AN INCREASED SCORE ON A PRE/POST VOCATIONAL INFORMATION SURVEY.

The development of these project-designed information surveys has been described (pp. 5-6) previously. The findings are contained in Table 4.

Table 4

A Comparison of Pre/Post Test Scores of Experimental and Control Schools as Measured by the Occupation Information Survey

Elementary Level

	Pretest Mean	Post-test Mean	Significance Level
Mark West-Control	6.226	6.945	.01
Lehman Elem., Santa Rosa-Experimental	6.923	7.702	.01
New Haven-Experimental	6.672	7.565	.01

Secondary Level

	Pretest Mean	Post-test Mean	Significance Level
Petaluma Jr. High-Control	32.937	34.734	.01
Cook Jr. High, Santa Rosa-Experimental	33.218	34.264	.05
Santa Rosa High-Experimental	36.101	37.435	.01

Experimental group subjects were tested in a pre/post format. Pre/post gains were assessed for individuals who participated in the entire program. "T-test was used to assess these gains with the following results:

At the elementary level on the 11 item inventory, 11 would have been a perfect score. Pre/post findings yield significantly increased scores for both experimental schools and the control school (significant level .01 - see Table 4). Greater gains in scores are evidenced for the two elementary experimental schools. These gains were as follows:

Mark West - Control	.719
Santa Rosa - Experimental	.779
New Haven - Experimental	.893

At the secondary level on the 44 item inventory pretest (perfect score 50), the mean scores for the experimental schools were higher than for the control. Results indicate that the control school made greater gains than the project schools despite the fact that the control group had no formal in-school career exploratory experiences. Gains were as follows:

Petaluma - Control	1.797
Cook - Experimental	1.046
Santa Rosa - Experimental	1.334

Note: Secondary students in New Haven were not included in this study since they participated for unequal periods ranging from one to three trimesters and cannot, therefore, be compared with students who were a part of the project or control for an entire year. The above table is based on scores for same students pre/post.

Table 5

A Comparison of the Mean Scores of Experimental and Control Schools at Project Conclusion As Measured by the Occupation Information Survey

Elementary Level

TRUE N = 463	H = 12.215	D.F. = 2	Significance Level = .00223
GROUP	1 New Haven Experimental	2 Santa Rosa Experimental	3 Mark West Control
SIZE	159	108	196
RANK SUMS	40120.00	26729.00	40567.00
MEAN RANK	252.33	247.49	206.97
MEAN SCORES	7.67	7.65	6.97

Secondary Level

TRUE N = 317	H = 31.679	D.F. = 2	Significance Level = .01
GROUP	1 Cook Jr. High Experimental	2 Petaluma Jr. High Control	3 Alvarado Jr. High Experimental
SIZE	141	102	74
RANK SUMS	24926.50	17577.50	7899.00
MEAN RANK	176.78	172.33	106.74
MEAN SCORES	34.26	34.03	30.58

Table 5 compares the entire project populations at the end of the school year. This includes subjects who entered during the project and changed class groups because of district staff decisions. The total time of participation for members of these groups is, therefore, indefinite.

Kruskal-Wallis H-test and Mann Whitney U were the techniques used for this analysis of findings for the program-designed inventories. For information and justification for such procedures, reference is made to Siegel's Nonparametric Statistics for the Behavioral Sciences in the McGraw-Hill Series in Psychology, McGraw Hill Book Co., New York, 1956.

In summary, on the 11 item (11 perfect score) elementary inventory both experimental groups scored higher (7.67 for New Haven and 7.65 for Santa Rosa) than the control group (6.97). At the secondary level, on the 44 item (44 perfect score) inventory, Cook Junior High in Santa Rosa (experimental) scored highest (34.26), but Petaluma Junior High (control) scored approximately at the same level (34.03). The New Haven experimental group at Alvarado Junior High was low at 30.58.

The fact that New Haven students were on a trimester plan and that the entire project got underway late in that district might contribute to this low score.

OBJECTIVE 5

FIFTY PERCENT OF ALL STUDENTS SIXTH GRADE AND ABOVE IN THE EXPERIMENTAL SCHOOLS WILL DEMONSTRATE ONE OR MORE EXPLORATORY (INFORMATION-SEEKING) BEHAVIORS DURING THE SCHOOL YEAR 1971-72 AS COMPARED TO TWENTY PERCENT OR LESS IN THE CONTROL SCHOOLS.

This objective was met. A total of 400 secondary students in each of the two experimental districts were involved with an average of 10 career exploratory experiences.

OBJECTIVE 6

ALL TEACHERS IN THE EXPERIMENTAL SCHOOLS WILL IMPLEMENT THREE OR MORE CAREER DEVELOPMENT EXPERIENCES DURING THE SCHOOL YEAR 1971-72 AS COMPARED TO TWO OR LESS IN THE CONTROL SCHOOLS DURING THE SAME TIME PERIOD.

All of the participating teachers in the experimental schools far exceeded the three or more career development experiences. They were, in fact, required to conduct at least one such experience per month. All teachers did meet and exceed the project minimum one-a-month experience requirement.

SUMMARY AND CONCLUSIONS

During the project's operation, original objectives were modified primarily as a direct result of the late timing for completing funding arrangements. (Such modifications were detailed in a quarterly report, after having been discussed with State Department of Education consultants.) Schools and programs to be evaluated had begun operation in September and the evaluation project did not begin until November, thus preventing the possibilities for certain pre/post studies.

The evaluation project was, of course, integrally related to the implementation project. An evaluation component can only reflect upon the measurable elements of the project it purports to evaluate.

The project, through the development of career development experiences involving students, parents, the community, and the schools, within the normal curriculum in certain experimental schools, had as its objectives:

a. To demonstrate a change in attitude of students toward careers and vocations as measured by a test of vocational maturity.

   This was not conclusively demonstrated because a pretest could not be given. Post-test results were compared to various State norms but no significant differences were evident.

b. To produce a significant increase in vocational information by experimental students as compared to a control population.

   Staff designed and validated tests of vocational information (two forms - elementary and secondary) indicated a significantly greater increase by the experimental subjects at the elementary level but a larger increase by control subjects at the secondary level.

   This difference in results at the elementary and secondary levels could not be explained on the basis of any of the data collected.

c. To change attitudes toward vocational education and career education by staff members, parents, and community members.

   The pretesting of attitude needed to make this assessment was not carried out so that only subjective opinion of project teachers and observers could be used as evidence.

   These opinions indicate increased interest in vocational education and career education on the part of parents but could not demonstrate changed attitudes.

d. To increase parent and community participation in curriculum planning and implementation in the experimental schools. A compilation of the number of activities involving parents and

community in the career exploratory experiences of students indicates an extensive increase of participation as compared to the previous year.

e. To have students in the experimental schools demonstrate one or more exploratory (information seeking) behaviors during the school year. A total of 400 students were involved with an average of ten career exploratory experiences. No data were collected in the control schools so comparisons cannot be drawn.

f. To have teachers in the experimental schools implement three or more career development experiences during the school year as compared to two or less in the control schools. The experimental teachers did in fact implement at least one experience per month, exceeding the objectives. No data were collected in the control schools so no comparison can be made.

RECOMMENDATIONS FOR FURTHER STUDY

During the course of the implementation of the project and the evaluation activities reported herein, a number of related questions and suggestions for further study have become evident.

What other effects did participation in career exploration experiences have on the students involved?

a. Did their attendance in school improve?

b. Did the experimental group show a lower drop-out rate?

c. Did grade-point averages change?

d. Do any effects of a, b, or c continue beyond the duration of the project?

What was the effect of participation in the project on the teachers?

a. Do they continue to incorporate career education concepts in their classes when no longer required to do so by the project?

b. Do some of the changes in curriculum spread to the rest of the faculty?

These questions and others could be considered using the faculties and students involved in this project if such a study could follow this one for several years, with an opportunity to examine the same population, teachers, and students. If this were not possible, it might be more practical to consider these questions as an integral part of a new project.

APPENDIX A

Project-Designed Inventories

SONOMA COUNTY OFFICE OF EDUCATION
Walter A. Eagan, Superintendent
County Administration Center, Rm. 111-E
2555 Mendocino Avenue
Santa Rosa, California 95401

EPDA CAREER EDUCATION PROJECT
Occupation Information Survey
(Elementary Form)

NAME _____

TEACHER _____

GRADE _____ SCHOOL _____

SEX _____ Answer YES or NO to the following questions:

Yes	No		
____	____	1.	Do you think there are some jobs that are not important?
____	____	2.	Could most people do well in more than one different job?
____	____	3.	Does being a girl make a difference in picking a job?
____	____	4.	Will the same jobs be available when you finish school as there are now?
____	____	5.	Does a person's size make a difference in what job he chooses?
____	____	6.	Does how well you do in school make a difference in what job you can choose?
____	____	7.	Will the job you choose make a difference in how much free time you have?
____	____	8.	Can your hobbies help you choose a job?
____	____	9.	Do you have to go to college to be ready for a job?
____	____	10.	Does every job have its bad points?
____	____	11.	Do you feel you should be able to choose your own job?

Please complete the following tasks:

Tell me 3 things you are interested in.

Tell me 3 jobs you would like to do.

Name as many jobs as you can in one minute.

Give me 3 reasons why people work.

Alameda County School Department
Rock La Fleche, Superintendent of Schools
224 West Winton Avenue, Hayward, California 94544

EPDA CAREER EDUCATION PROJECT
Occupation Information Survey
(Junior-Senior High Form)

NAME _____

TEACHER _____

GRADE _____ SCHOOL _____

SEX _____ (Circle True or False)

T F 1. Many jobs are unimportant.

T F 2. Most of us could be successful in a number of different occupations.

T F 3. Being a girl does not influence occupational choice.

T F 4. Experiences we have in childhood affect our career choices.

T F 5. How we feel about ourselves affects our job choices.

T F 6. Most people could be successful in different occupations.

T F 7. A Black person has an equal chance for employment.

T F 8. New occupations are always coming into existence.

T F 9. Personal characteristics are very important for job success.

T F 10. Most people are satisfied with one occupational choice.

T F 11. For some occupations, it is necessary to live somewhere else to get a promotion.

T F 12. Our personal characteristics change throughout our lives.

T F 13. Most adults can be retrained for a different occupation.

T F 14. Most of us will stay at one occupation throughout our lives.

T F 15. Staying in your community affects the number of occupations available to you.

T F 16. Our successes and failures do not contribute to career decision-making.

T F 17. It is important to understand ourselves to make good occupational choices.

T F 18. The occupational market is always in a state of change.

T F 19. A person's size does not affect his occupational choice.

T F 20. It is a person's responsibility to gather information about the world of work and occupations he is interested in.

T F 21. A recession affects some occupations more than others.

T F 22. How well you do in school does not affect occupational choice.

T F 23. The Hippie Movement has affected the retail business.

T F 24. A person should be allowed to make his own occupational choice.

T F 25. Your health condition will affect the number of jobs open to you.

T F 26. Changes in the world situation do not affect job opportunities.

T F 27. Each of us is responsible for our occupational choices.

T F 28. If you are a doctor and do not like your work, you cannot change to a different job.

T F 29. Political decisions do not affect the occupational market.

T F 30. Occupations can be classified into groups according to their similarities.

T F 31. The introduction of machines to save labor affects many occupations.

T F 32. Your hobbies could have an effect on your occupational choice.

T F 33. School courses can be important for later occupational choice.

T F 34. All occupations contribute to our society's way of living.

T F 35. You will probably have more leisure time than your father had.

T F 36. The amount of time you have for leisure is not affected by your occupation.

T F 37. Knowing how different occupations are interrelated gives you a wider range of occupational choice.

T F 38. Most occupations have no disadvantages.

T F 39. Being unhappy with your work means being unhappy with your life.

T F 40. After high school, it is necessary to go to college for further training.

T F 41. There are several ways to get training to become an airline pilot.

T F 42. All jobs give people personal satisfaction.

T F 43. There are things you can do to make an occupation more satisfactory.

T F 44. There are usually several ways to get training for a specific occupation.

T F 45. Every occupation has its disadvantages.

T F 46. A person who is dissatisfied with one company may be satisfied doing the same kind of work for another company.

Complete the following items:

List three things you are interested in.

List three occupations in line with your interests.

List three things you can do well.

List three reasons why people work.

What causes occupations to be added and/or eliminated?

Where could you get information about occupations (name as many as possible)?

APPENDIX B

Nationwide Experts

NATIONWIDE EXPERTS

Dr. Gene Bottoms, Associate Director, State Department of Education, Georgia

Dr. Dick Byrne, University of Maryland

Dr. Bob Fern, Grove Street College, Oakland

Dr. Norm Gysbers, University of Missouri

Dr. Robert Hoppock, New York University

Dr. Kenneth Hoyt, University of Maryland

Dr. Thomas Jacobson, Career Information Center, San Diego County Department of Education

Dr. Clarence Johnson, Coordinator of Guidance, Orange County Office of Education

Dr. Darryl Laramore, Sonoma County Office of Education

Dr. Leonard Marasciullo, University of California, Berkeley

Dr. Earle Moore, University of Missouri

Dr. Stan Ostrom, Guidance, Santa Clara County Office of Education

Dr. Edward Taylor, Alameda County School Department

Dr. Jack Thompson, Guidance, Sonoma County Office of Education

APPENDIX C

Factor Analyses

Occupation Information Survey
(Elementary Form)

Based Upon 191 Control Group Subjects, Grades 1-6

Mark West Elementary School, Santa Rosa

FACTOR 1

Variable	Factor Scoring Weight	
2	.312	Could most people do well in more than one different job?
6	.631	Does how well you do in school make a difference in what job you can choose?
8	.693	Can your hobbies help you choose a job?
9	-.420	Do you have to go to college to be ready for a job?
10	.693	Does every job have its bad points?

FACTOR 2

Variable	Factor Scoring Weight	
2	-.395	Could most people do well in more than one different job?
3	.664	Does being a girl make a difference in picking a job?
5	.706	Does a person's size make a difference in what job he chooses?
7	.378	Will the job you choose make a difference in how much free time you have?
9	.415	Do you have to go to college to be ready for a job?

FACTOR 3

Variable	Factor Scoring Weight	
2	.450	Could most people do well in more than one different job?
7	.626	Will the job you choose make a difference in how much free time you have?
11	.784	Do you feel you should be able to choose your own job?

FACTOR 4

Variable	Factor Scoring Weight	
1	.722	Do you think there are some jobs that are not important?
4	.734	Will the same jobs be available when you finish school as there are now?

Occupation Information Survey
(Junior-Senior High Form)

Based Upon 290 Control Group Subjects, Grades 7-12

Petaluma Junior-Senior High

FACTOR 1

Variable	Factor Scoring Weight	
3	.498	Being a girl does not influence occupational choice.
16	.619	Our successes and failures do not contribute to career decision-making.
19	.437	A person's size does not affect his occupational choice.
26	.411	Changes in the world situation do not affect job opportunities.
29	.621	Political decisions do not affect the occupational market.
32	-.516	Your hobbies could have an effect on your occupational choice.
36	.412	The amount of time you have for leisure is not affected by your occupation.
38	.384	Most occupations have no disadvantages.
40	.458	After high school, it is necessary to go to college for further training.

FACTOR 2

Variable	Factor Scoring Weight	
20	.744	It is a person's responsibility to gather information about the world of work and occupation he is interested in.
24	.618	A person should be allowed to make his own occupational choice.
27	.354	Each of us are responsible for our occupational choices.
28	-.332	If you are a doctor and do not like your work, you cannot change to a different job.

FACTOR 2 (continued)

Variable	Factor Scoring Weight	
43	.546	There are things you can do to make an occupation more satisfactory.
46	.303	A person who is dissatisfied with one company can be satisfied with another company doing the same kind of work.

FACTOR 3

Variable	Factor Scoring Weight	
4	.334	Experiences we have in childhood affect our career choices.
5	.673	How we feel about ourselves affects our job choices.
11	.520	For some occupations, it is necessary to live somewhere else to get a promotion.
15	.639	Staying in your community affects the number of occupations available to you.
17	.354	It is important to understand ourselves to make good occupational choices.

FACTOR 4

Variable	Factor Scoring Weight	
2	.736	Most of us could be successful in a number of different occupations.
6	.792	Most people could be successful in different occupations.

FACTOR 5

Variable	Factor Scoring Weight	
7	.515	A Black has an equal chance for employment.
13	.758	Most adults can be retrained for a different occupation.
19	.364	A person's size does not affect his occupational choice.
35	- .325	You will probably have more leisure time than your father.

FACTOR 6

Variable	Factor Scoring Weight	
4	.397	Experiences we have in childhood affect our career choices.
21	.785	A recession affects some occupations more than others.
46	.415	A person who is dissatisfied with one company can be satisfied with another company doing the same kind of work.

FACTOR 7

Variable	Factor Scoring Weight	
22	.772	How well you do in school does not affect occupational choice.
26	.431	Changes in the world situation do not affect job opportunities.
28	.402	If you are a doctor and do not like your work, you cannot change to a different job.

FACTOR 8

Variable	Factor Scoring Weight	
3	- .309	Being a girl does not influence occupational choice.
9	.779	Personal characteristics are very important for job success.
26	- .435	Changes in the world situation do not affect job opportunities.
36	- .348	The amount of time you have for leisure is not affected by your occupation.

FACTOR 9

Variable	Factor Scoring Weight	
25	.504	Your health condition will affect the number of jobs open to you.
31	.677	The introduction of machines to save labor affects many occupations.

FACTOR 9 (continued)

Variable	Factor Scoring Weight	
33	.514	School courses can be important for later occupational choice.

FACTOR 10

Variable	Factor Scoring Weight	
7	- .326	A Black has an equal chance for employment.
37	.603	Knowing how different occupations are interrelated gives you a wider range of occupational choice.
45	.673	Every occupation has its disadvantages.

FACTOR 11

Variable	Factor Scoring Weight	
4	- .317	Experiences we have in childhood affect our career choices.
8	- .433	New occupations are always coming into existence.
10	.628	Most people are satisfied with one occupational choice.
14	.737	Most of us will stay at one occupation throughout our lives.

FACTOR 12

Variable	Factor Scoring Weight	
8	.319	New occupations are always coming into existence.
30	.799	Occupations can be classified into a group due to their similarities.
33	.341	School courses can be important for later occupational choice.
46	.411	A person who is dissatisfied with one company can be satisfied with another company doing the same kind of work.

FACTOR 13

Variable	Factor Scoring Weight	
37	.318	Knowing how different occupations are interrelated gives you a wider range of occupational choice.
41	.548	There are several ways to get training to become an airline pilot.
44	.716	There are usually several ways to get training for a specific occupation.

FACTOR 14

Variable	Factor Scoring Weight	
1	.724	Many jobs are unimportant.
34	-.322	All occupations contribute to our society's way of living.
42	-.305	All jobs give people personal satisfaction.

FACTOR 15

Variable	Factor Scoring Weight	
12	.744	Our personal characteristics change throughout our lives.
34	.320	All occupations contribute to our society's way of living.

FACTOR 16

Variable	Factor Scoring Weight	
4	.334	Experiences we have in childhood affect our career choices.
18	.759	The occupational market is always in a state of change.
35	.343	You will probably have more leisure time than your father.

FACTOR 17

Variable	Factor Scoring Weight	
27	.531	Each of us is responsible for our occupational choices.
35	.374	You will probably have more leisure time than your father.
39	.762	Being unhappy with your work means being unhappy with your life.

FACTOR 18

Variable	Factor Scoring Weight	
17	-.422	It is important to understand ourselves to make good occupational choices.
23	.783	The Hippie Movement has affected the retail business.
25	-.383	Your health condition will affect the number of jobs open to you.

LC:ke
9/28/72